v7 Hardware Certification Test Suite 1 Technical Notes

Technical Information Concerning v7 Product Releases
Edition 4

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Abstract

v7 is the test portion of Red Hat Enterprise Linux Hardware Certification (hwcert). The v7 Technical Notes contain important information available at the time of release.

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v7 is the test portion of Red Hat Enterprise Linux Hardware Certification (hwcert). Its built-in suite of tests verify the compatibility of hardware devices for running with Red Hat Enterprise Linux. Each v7 test run builds a results database for submission to Red Hat's hardware catalog as an RPM package. v7 is the update to and replacement for **hts 5.3**.

The v7 *Technical Notes* contain important information available at the time of release. Known problems, resources, and other issues are discussed here. Read this document before you use v7.

1. v7 release 1.6

This section contains important information pertaining to release 1.6 of the **v7 Hardware Test Suite**, including known problems, resources, and other issues. Read this document before using this release of v7.

Bug Fixes

BZ#751069

Prior to this update, the kudzu tool was removed from Red Hat Enterprise Linux 6. As a consequence, the v7 tests returned the error message "sh: kudzu: command not found". This update removes all kudzu options in the v7 code and the v7 test suite no longer issues these messages.

BZ#815582

The device load sequence (sda, sdb, etc) in the kdump kernel differs from the first kernel. Prior to this update, the v7 kdump test used the device name (sda, sdb) instead of the UUID or LABEL in the dump target and kdump failed to dump the vmcore to the correct device. As a consequence, the kdump test failed. This update uses the UUID or LABEL in the dump target, which allows kdump to dump the vmcore to correct device.

BZ#822246

Prior to this update, the clocktest section of the CORE test was not completely correct. As a consequence, the CORE test could fail on larger systems, for example with 2048 CPUs. This update modifies the underlying code and the clocktest works now as expected.

BZ#871254

Prior to this update, the pccard test failed to handle the exception in case that no PC Card device was plugged into the slot. As a consequence, a traceback could occur. This update modifies the pccard test to handle the exception when no PC Card device plugged. Now, an informative error message is given instead of a traceback.

BZ#880916

Prior to this update, the WLAN test cotnained a mispront. As a consequence, the subtest "Scan Wireless Networks" operation ran twice. This update modifies the underlying code so that the WLAN test scans the wireless network only once.

BZ#880986

Prior to this update, the VIDEO test incorrectly used the wrong pathway for the driver information on 64-bit systems. As a consequence, the VIDEO test printed an empty result on 64bit systems. This update uses the correct pathway "/usr/lib64/xorg/modules/drivers" on 64-

bit systems. Now, the driver information is correctly displayed on 64bit systems.

Enhancements

BZ#843194

With this update v7 supports calling home to the catalog with a given certification ID to retrieve the list of open, non-confirmed test classes that apply to the certification when using the certify command. The list of open test classes is compared to possible test classes after the list of tests, for which the v7 test suite already has passing results, is removed from the running plan.

BZ#843600

With this update, the storage test uses the udev device manager instead of the deprecated HAL for hardware detection in test planning and execution.

BZ#843602

With this update, the optical disk tests for cdrom, dvd, and bluray use the udev device manager instead of the deprecated HAL for hardware detection in test planning and execution.

Note: Please put a disk in the device drive before you do "v7 plan" if you want to ceritify in RHEL6.3 or prior releases, due to a known issue in Red Hat Enterprise Linux 6.3 or earlier releases.

BZ#843604

With this update, the expresscard test uses the udev device manager instead of the deprecated HAL for hardware detection in test planning and execution.

BZ#843606

With this update, the infiniband test uses the udev device manager instead of the deprecated HAL for hardware detection in test planning and execution.

BZ#843607

With this update, the audio test uses the udev device manager instead of the deprecated HAL for hardware detection in test planning and execution.

BZ#843608

With this update, lid test reads data from the /proc interface instead of the deprecated HAL information for hardware detection in test planning and execution.

BZ#843609

With this update, the network test uses the udev device manager instead of the deprecated HAL for hardware detection in test planning and execution.

BZ#843610

With this update, the PCCARD test uses the udev device manager instead of the deprecated HAL for hardware detection in test planning and execution.

BZ#843611

With this update, the USB test uses the udev device manager instead of the deprecated HAL for hardware detection in test planning and execution.

BZ#843616

With this update, the wlan test uses the udev device manager instead of the deprecated HAL for hardware detection in test planning and execution.

BZ#866917

With this update, the VIDEO test uses the udev device manager instead of the deprecated HAL for hardware detection in test planning and execution.

BZ#871515

With this update, the profiler test for virtualization no longer depends on the deprecated HAL.

BZ#880079

With this update, the v7 AUDIO test prints the codec information from the /proc/asound/card*/pcm*/info file of the sound card in use, so that the user can view the codec of audio devices during the AUDIO test more conveniently.

BZ#888688

With this update, the INFINIBAND test displays extra udev information in test output and the hardware log, including all available network interface information.

Users of *v7* are advised to upgrade to these updated packages, which fix these bugs and add these enhancements.

2. v7 release 1.5

This section contains important information pertaining to release 1.5 of the **v7 Hardware Test Suite**, including known problems, resources, and other issues. Read this document before using this release of v7.

Bug Fixes

BZ#649675

Prior to this update, the *xen* packages were not installed as dependencies when executing **`v7 plan`**. This update modifies the the underlying code to add the *xen* packages to the v7 runtime dependencies if the **`v7`** test suite is running on the xen kernel. Now, users are prompted to install all necessary *xen* packages when executing **`v7 plan`**.

BZ#687990

Prior to this update, the **`sosreport`** command could, under certain circumstances, fail when running the **`info`** test. This update modifies the underlying code so that **`sosreport`** no longer fails when running **`info`**.

BZ#705999

Prior to this update, **v7 --help** did not document the **v7 save** command. This update adds the missing information to the help file and realigns the line “verify”. Now **v7 --help** shows the correct help message for the **v7 save** command.

BZ#707144

Prior to this update, the **bluray** test could, under certain circumstances, fail when attempting to rewrite an already used *Blu-ray Disc recordable* (BD-R) disc. This update modifies the underlying code so that the **bluray** test is now more robust to finish the test run correctly.

BZ#713368

Prior to this update, the **v7 network** test could fail if IPv6 instead of IPv4 was used for the test data of the client or server due to mismatching addresses. This update modifies the **http transfer** test for IPv6 so that the **v7 network** test no longer fails.

BZ#732922

Prior to this update, the **cpuscaling** test displayed a misleading Python traceback if the test was run on the xen kernel. This update modifies the underlying code to send the message that the **cpuscaling** test is not available and exits as expected.

BZ#754919

Prior to this update, the **bluray** test could, under certain circumstances, choose the wrong media type. This update modifies the **bluray.py** code to choose the most capable media type to test.

BZ#760755

Prior to this update, the **info** test displayed a misleading Python traceback if a currently used module did not have a **srcversion** entry. This update modifies the underlying code to send the message “Error: could no find module file for no_srcver_mod” and exit as expected.

BZ#781243

Prior to this update, the **info** test did not correctly capture modules, which were tainted for multiple signs. This update modifies the underlying code so that the **info** test now successfully captures modules with multiple tainted signs.

BZ#823461

Prior to this update, the **v7** test suite failed to check module symbols in Red Hat *Driver Update Program* (DUP) packages. This update modifies the underlying code to correctly check the module symbols.

Enhancements

BZ#488745

This update adds the new **infiniband** test to the **v7** test suite, which is a sanity test to detect *InfiniBand* (IB) via *Peripheral Component Interconnect* (PCI) class or subclass, and log

info. To start the **infiniband** test use the **ibstat** or **ibstatus** commands.

BZ#532557

This update adds a new functionality to the **v7** test suite to warn users if the test suite is not running on a GA kernel.

BZ#608568

This update adds a new functionality to the **v7** test suite to detect all X.Org drivers and to warn users in case non-Red Hat drivers are found.

BZ#611409

This update adds a new functionality to the **v7 video** test to collect information about the currently used video controller. To start this functionality use the **xvinfo**, **xdriinfo** or **glxinfo** commands.

BZ#702168

With this update, the *fence-agents* package is no longer required as a dependency when installing the *v7-server* package.

BZ#746029

With this update, the **info** test reports reboot and fv guest time limit changes in the **/etc/v7.xml** file and informs the user that the configuration file has been changed.

BZ#748753

With this update, the Unicode decode error messages “Warning: Unicode decode error in /var/log/messages” are no longer displayed, unless the **--debug** option is set.

BZ#750721

This update converts the misleading message "Warning: could not log sound card information" to the correct message “Error: could not log sound card information”.

BZ#782189

This update allows the **v7** test suite to upload results directly to the hwcert catalog site. Users can now choose to open a new certificate, modify the existing certificate, or keep the test result not submitted when executing the **v7 plan** or **v7 submit** commands.

BZ#782195

This update enables the **v7** test suite to verify only the **rteval**, **hwlatdetect** and **info** tests on the realtime kernel with the **v7 verify** command.

BZ#782197

This update adds D-Bus UDisks support for the **storage** test to the **v7** test suite.

BZ#782229

The **v7 certify** command now supports component mode. To certify all tests with the same device name use the **--device** option and for all tests with the unique device identifier use the **--udi** option.

BZ#784419

This update adds support for **greylist** symbols to the **info** test in Red Hat *Driver Update Program* (DUP) packages.

BZ#799118

With this update, the **v7 clean** command preserves *System Under Test* (SUT) hardware information when results are removed. To remove all results including SUT hardware information, use the **v7 clean all** command instead.

BZ#805757

With this update, the *sos* package is a dependency of the *v7* package.

BZ#810809

This update allows **v7** commands to return a non-zero value if the command execution fails.

BZ#818331

With this update, the functionality to schedule the **reboot** test automatically when executing **v7 plan** has been replaced by the **kdump** test. To add the **reboot** test manually use the **--add** option.

BZ#822690

With this update, the **v7** test suite automatically fills the values for the **vendor**, **make**, and **model** fields if these fields are left empty.

Users of *v7* are advised to upgrade to these updated packages, which fix these bugs and add these enhancements.

3. v7 release 1.4

This section contains important information pertaining to release 1.4 of the **v7 Hardware Test Suite**, including known problems, resources, and other issues. Read this document before using this release of v7.

Bug Fixes

BZ#521609

In v7 1.3 and previous versions, the **v7 plan --server** command incorrectly reported that the server is not running even when the server was running as expected. This update corrects this error; now, running status verification from the system under test (SUT) is more reliable and no longer produces incorrect warning messages.

BZ#559834

Due to an error introduced in v7 1.2, running the **v7 plan** on the Itanium architecture failed to display a list of **fv_*** tests (such as **fv_core** or **fv_storage**). With this update, this error has been fixed and the aforementioned tests can now be listed as expected on this architecture.

BZ#702140

Version 1.3 of the v7 test suite did not display the exit status of a test, making it difficult for the user to determine whether the test passed or failed. This update resolves this issue so that whenever a test finishes, **PASS** or **FAIL** is displayed to the user.

BZ#705326

In v7 1.3, the **fv_*** tests (such as **fv_core** or **fv_storage**) were incorrectly tagged as **interactive**, which caused them to report incorrect test results. This update ensures that the **fv_*** tests are tagged properly and produce correct results.

BZ#708046

In version 1.3 of the v7 test suite, an attempt to run the **info** test may have failed with a traceback when a third-party module existed or when the module did not belong to any of the installed packages. With this update, the **info** test no longer displays a traceback in these situations.

BZ#711161

In v7 1.3, supplying a non-integer or empty value as a prompt response caused the **usb** test to raise an exception. This update adapts the **usb** test to recognize invalid user input and when a non-zero value or an empty string is supplied, the test now prompts the user to provide a correct value.

BZ#714848

In version 1.3 of the v7 test suite, the presence of a Technology Preview module during testing caused the **info** test to display a warning message and fail. This may have been confusing for the user, because warning messages are not supposed to result in a test failure. With this update, this error no longer occurs and a proper error message is now displayed in this situation.

BZ#716557

In v7 1.3, the **rteval** test incorrectly reported failure when the latency exceeded 100 µs. In v7 1.4, the acceptable maximum latency has been extended to 150 µs.

BZ#717779

In v7 1.3, when the **link_delay** was not set in the **kdump.conf** configuration file, the **reboot** NFS test may have failed to resolve the IP address when the kexec kernel attempted to store the **vmcore** file on an NFS server. With this update, the **reboot** test has been replaced with **kdump**, which sets the **link_delay** value to 60 seconds. This ensures that the kexec kernel has enough time to obtain the IP address before attempting to save the core dump on an NFS server.

BZ#726512

Previous versions of the v7 test suite installed an old copy of Python's **decimal** module that is

required by the **cpuscaling** test. This module was originally included to provide support for Red Hat Enterprise Linux 4, which did not include it as part of the Python 2.3 installation. However, on Red Hat Enterprise Linux 5 and 6, this module is shipped with the Python programming language itself. Since the **decimal** module installed with v7 took precedence over the version distributed with Python, and since it is no longer required for v7 to provide its own version of this module, this update removes it from the package.

BZ#731611

Due to a regression introduced since version 1.1 of the v7 test suite, the **udp** test was accidentally omitted from the **network** test. This update applies a patch that re-includes the **udp** test so that it is now executed during the **network** test as expected.

BZ#732463

In v7 1.3, the **v7 save** command incorrectly reported success even when no tests had been executed and the produced **results.xml** file was therefore empty. This update adapts the **v7** utility to display an error message in such a situation, informing the user that no tests have been executed yet and that there are no test results to be saved.

BZ#733618

In v7 1.3, it was possible for the **kdump** NFS test to pass without having the remote server configured. This error no longer occurs, and when no remote server is set, the **kdump** test now fails as expected.

BZ#734476

When using version 1.3 of the v7 test suite, the presence of a Technology Preview module on the tested system caused the **info** test to fail. Since not every Technology Preview module is supposed to fail the test, this update introduces a whitelist for approved Technology Preview modules (such as **fscache**). As a result, the modules that are on this whitelist no longer cause the **info** test to fail.

BZ#734985

When using v7 1.3, an attempt to run the **info** test on a system with third-party modules sometimes failed with a traceback. With this update, a patch has been applied to resolve this issue so that no traceback is displayed in this scenario.

BZ#736638

In v7 1.3, the **storage** test failed to run on a 4K sector device. This happened, because the test used a hard-coded minimum block size of 1024 bytes. With this update, the **storage** test has been adapted to set the minimum block size dynamically based on the value of **/sys/block/*device*/queue/hw_sector_size**.

BZ#736666

In version 1.3 of the v7 test suite, the **storage** test performed the read and write testing in an order similar to the following:

```
write with 1024 bytes;
write with 2048 bytes;
...
write with 65536 bytes.
read with 1024 bytes;
read with 2048 bytes;
...
read with 65536 bytes.
```

This rendered the **storage** test unable to verify the data, because the old data was always overwritten by a subsequent operation. This error has been fixed, and the test has been adapted to perform the read and write operations in the correct order:

```
write with 1024 bytes; read with 1024 bytes and verifying;
write with 2048 bytes; read with 2048 bytes and verifying;
...
write with 65536 bytes, read with 65536 bytes and verifying.
```

BZ#736679

In version 1.3 of the v7 test suite, the **storage** test set the **enable=aio** option for both buffered and raw I/O testing. This was incorrect, because raw I/O should not be buffered. With this update, this error has been fixed, and when testing raw I/O, the **storage** test now uses the **flags=direct** option instead.

BZ#740002

In v7 1.3, the **info** test may have failed to verify the ABI whitelist on some systems, because certain module symbols could not be dumped using the **nm** command. This update adapts the **info** test to use the **modprobe --dump-modversions** instead, resolving this issue.

BZ#743609

In v7 1.3, the **cpuscaling UserSpace** test may have failed with the following error:

```
Error: could not repeat load test times within 5.0%
```

This happened, because the load times were not repeatable under user space. With this update, the aforementioned test has been adapted to only display a warning message and proceed with the testing in this situation.

BZ#746918

When running the **cpuscaling OnDemand** test, the previous version of the v7 test suite may have failed with the following error:

```
Error: Could not verify that cpu frequency has settled to the minimum value
```

This update adapts the aforementioned test to only display a warning message in this situation, allowing the test to pass if other results are good.

BZ#747433

Prior to this update, the output of the **v7 --help** command contained a typo in the word

"verify":

```
erify  - verify that the configuration is ready for testing
```

With this update, this typo has been corrected.

BZ#747736

In v7 1.3, the **profiler** test may have terminated unexpectedly with a traceback when it failed to unmount the **/dev/oprofile** device. This update adapts the **profiler** test to ignore such a failure, resolving this issue.

Enhancements

BZ#573598

Users are now prevented from disabling required tests (such as **info** or **suspend**) during testing, unless they use the **--debug** option. When the user supplies the **--debug** option, a warning message is still displayed before proceeding with the tests.

BZ#633652

The **bluray** test is now capable of testing the BD, BD-R, and BD-RE media types, and prompts users to choose a media type during the testing.

BZ#684075

On the first run, the **v7** utility now prompts the user to verify the vendor, make, and model, and allows them to edit the default values. These values are stored in the **results.xml** file.

BZ#690676

In addition to an RPM package, the v7 test suite has been adapted to also generate a gzip compressed **results.xml** file.

BZ#701491

The **kdump** test has been adjusted to use a more sophisticated dependency checking algorithm. As a consequence, this test no longer requires the *kernel-debug* package, and instead, in depends on the *crash* package.

BZ#702695

Version 1.4 of the v7 test suite is provided in two separate RPM packages: *v7* and *v7-server*. The *v7-server* is only required on the v7 test server side.

BZ#704031

The **storage** test has been adapted to display additional logical volume manager (LVM) debugging information during testing.

BZ#705844

With this update, an attempt to run an interactive test with the **--mode auto** command line

option fails instead of displaying **AUTO** or logging **PASS** as the test result.

BZ#710173

This update adapts the v7 test suite to proceed with the test without prompting the user for confirmation in the verification step if no error is detected.

BZ#718290

This update splits the **reboot** test into two separate tests: **kdump** and **reboot**. The **kdump** test is based on the original **reboot** test, but requires the **kdump** crash recovery service to be operational in order to pass. While the new **reboot** test is scheduled only once per system, the **kdump** test is scheduled twice: once for a local image and again for dumping an image over NFS.

BZ#725441

When a v7 test server is configured, the **v7 save** command now stores a copy of the test results on it. The web user interface of the v7 test server now also allows users to review the stored results of multiple systems under test (SUTs) organized by the vendor, make, model, host, or date. The general results are typically accessible by using the URL in the following form:

```
http://v7_server_hostname/v7/
```

Detailed results for each SUT can be downloaded by clicking the links on the above page.

BZ#730932

The v7 test verification now fails when the test server does not meet the minimum server version of the system under test (SUT).

BZ#731322

When performing network tests, the v7 server now stores the HTTP transfer file in a new directory, **/var/www/v7/transfer/**, instead of **/var/v7/store/**.

Note

This enhancement changes the v7 configuration file. Consequent to this, users are advised to remove the **/etc/v7.xml** file on both the server and systems under test (SUTs) before running the v7 tests.

BZ#732113

This update introduces a completely rewritten **cpuscaling** test, which resolves several legacy issues.

4. v7 release 1.3

This section contains important information pertaining to release 1.3 of the **v7 Hardware Test Suite**,

including known problems, resources, and other issues. Read this document before using this release of v7.

Bug Fixes

BZ#485212

Previously, the **v7 plan --add** command may have ended up with irrelevant UDI information in the **cpuscaling** test. With this update, the **cpuscaling** test is no longer associated with a logical CPU device and only one instance is executed during testing. As a result, running the **v7 plan --add** command no longer causes the **cpuscaling** test to end up with irrelevant UDI information.

BZ#579498

Due to an incorrect assumption that the maximum turbo boost value is 10%, an attempt to run the **cpuscaling** test on a Nehalem-EX based platform failed with an error message similar to the following:

```
Error: measured speedup vs expected speedup is 22.1% and is not within
10.0% margin.
```

With this update, this error no longer occurs, and the **cpuscaling** works correctly on Nehalem-EX based platforms.

BZ#589425

Due to an error in version 1.2 of the **v7** test suit, the **info** test only printed the major version of Red Hat Enterprise Linux. This update corrects this error, and the **info** test now displays both major and minor version as expected.

BZ#589739

Previously, the **cpuscaling** test incorrectly included unprocessed tags in its output. With this update, the output of the **cpuscaling** test no longer contain unprocessed tags.

BZ#589806

The previous version of the **v7**(8) manual did not contain a correct version number. To prevent this error, this update adapts the corresponding **Makefile** to update the version information in **v7**(8) each time the **make install** command is issued.

BZ#607976

Prior to this update, the output of the **info** test could contain error messages produced by the **sosreport** utility. With this update, the **info** test has been adapted to filter these messages from its output.

BZ#617646

Previously, the output of the **v7 print --report full** command did not include guest test logs for **fv_core**, **fv_memory**, **fv_network**, and **fv_storage** tests. This update corrects this error, and running the **v7 print --report full** command now displays guest test logs as expected.

BZ#618358

On a server-side installation of the **v7** test suite, an attempt to run a fencing test without the *fence-agents* package installed failed with an error. To prevent this error, this update adds the *fence-agents* package as a dependency for a server-side installation of the **v7** test suite.

BZ#623787

Prior to this update, the **core** test called the **stress** command with a fixed value of the **--vm-bytes** command line option. Consequent to this, the execution of the **stress** command during the **core** test on a system with not enough memory may have caused the system to stop responding. This update ensures that the argument passed to the **stress** command is scalable to fit the available memory size, so that the **core** test now works as expected.

BZ#627043

The previous version of the **network** test incorrectly assumed that the sit0 interface is present, and may have failed with the following error:

```
Error: could not restart interface sit0
```

Since this interface is not necessarily required for testing, this update removes it from the list of tested interfaces.

BZ#635973

On systems with a large amount of memory, the creation of a **vmcore** dump file during the execution of the **reboot** test could take several minutes to finish. With this update, the **reboot** test has been adapted to generate a compressed **vmcore** file, so that the **reboot** test now finishes in a reasonable time even on systems with large memory.

BZ#637261

When a user attempted to run the **info** test on a system without **SELinux** running in enforcing mode, the test failed. With this update, **v7** has been adapted to inform users that SELinux must be running in enforcing mode, and prompt them to choose whether to continue or not.

BZ#637687

Due to the standard output stream not being flushed properly, the output of the **network** test contained mixed up information about a network interface controller (NIC). With this update, this error no longer occurs, and the information about NICs are now displayed correctly.

BZ#640138

During the execution of the **cpuscaling** test, when a CPU load test failed, subsequent sub-tests could cause the test to terminate unexpectedly with the following error:

```
TypeError: float argument required
```

To prevent this error, the **cpuscaling** test has been updated to terminate immediately when the CPU load test fails.

BZ#641157

When running the **v7 print** command, the **fencing** test could incorrectly display “AUTO” as a result, even when it finished successfully. With this update, the **fencing** test has been corrected to display “PASS” when it succeeds, or “FAIL” when it fails.

BZ#642029

When an USB SCSI tape was already connected, an attempt to run the **v7 plan** command caused **v7** to terminate unexpectedly with the following error:

```
UnicodeEncodeError: 'ascii' codec can't encode characters in position 13-
20: ordinal not in range(128)
```

This update fixes this error, and the **v7 plan** command can now be executed even when a USB SCSI tape has been already connected.

BZ#646277

Previously, the **core** test incorrectly returned success even when clock jitter error occurred. This update ensures that when the clock jitter error occurs, the **core** test now correctly reports failure.

BZ#649314

The previous version of **v7** incorrectly terminated with exit status 1 after a successful run. This error has been fixed, and when **v7** finishes successfully, it now terminates with exit status 0 as expected.

BZ#649444

When a user attempted to run a **v7** test on a system without **SELinux** running in enforcing mode, the test failed. With this update, **v7** has been adapted to inform users that SELinux must be running in enforcing mode, and prompt them to choose whether to continue or not.

BZ#649520

On 32-bit Red Hat Enterprise Linux 5 systems, running the **v7 plan** command did not add **fv_core**, **fv_memory**, **fv_network**, and **fv_storage** to the test plan. This error has been fixed, and these tests are now included in the plan as expected.

BZ#649729

Previously, the **fv_core**, **fv_memory**, **fv_network**, and **fv_storage** tests could fail when KVM modules were not loaded into the kernel. This update ensures that when the KVM modules are not loaded, **v7** attempts to load them first.

BZ#654960

When kernel validation failed, the previous version of the **info** test incorrectly reported “PASS”. This error has been fixed, and failed kernel validation now causes the **info** test to report “FAIL” as expected.

BZ#660214

Previously, the test runs that include the **reboot** test issued the **info** test twice: before and after a reboot. Since this may have rendered the resulting output difficult to comprehend, this

update adapts the underlying source code not to re-run the **info** test upon a system reboot.

BZ#674375

Previously, the **v7 certify** command failed to add tests for multiple devices if one of these devices had already passed. This error no longer occurs, and when one of the devices passes the test, the remaining devices can still be added as expected.

BZ#678642

When the previous version of **v7** encountered an error, it produced error output with missing line breaks. To make it easier for users to read such output, this update ensures that all error messages are terminated with a newline character.

BZ#678949

On some architectures, the **profiler** test may have been unable to start the **oprofiled** service. This update corrects this error, and **oprofiled** can now be successfully started on all supported architectures.

BZ#681470

On systems with a comma in the system name field, an attempt to run the **v7 submit** command failed with the following error:

```
Error: failed to generate results rpm
```

With this update, the underlying source code has been adapted to omit commas when determining the name for an RPM package, and the presence of commas in the system name no longer causes the **v7 submit** command to fail.

BZ#681737

Previously, the **core** test incorrectly reported “PASS” as a test result even when it failed to locate the **/var/log/messages** file. This error has been fixed, and when the **/var/log/messages** file is missing, the **core** test now correctly reports “FAIL”.

BZ#682115

Due to certain commands writing to standard error, the **fv_core**, **fv_memory**, **fv_network**, and **fv_storage** tests could incorrectly report an error even when they finished successfully. This error has been fixed, and messages written to standard error no longer cause these tests to fail.

BZ#682969

Previously, the **v7 certify** command failed to return a proper exit status when it finished successfully. This error no longer occurs, and the **v7 certify** command now terminates with exit status 0 in this case.

BZ#690215

Since the **floppy** test is no longer required for certification, this update removes it from the *v7* package.

BZ#690799

FV data images have been updated to version 1.3. As well, the **v7 certify --mode auto** command is now used on a guest in order to complete the **fv_core**, **fv_memory**, **fv_network**, and **fv_storage** testing.

BZ#693429

Previously, **clocktest** only worked up to 1024p. With this update, the underlying source code has been adapted to use dynamic cpuset allocation, and **clocktest** now works as expected.

BZ#701621

On Red Hat Enterprise Linux 6, a change of a kernel message caused the **suspend** test to fail when resuming from a hibernation. This update adapts the **suspend** test to recognize this new message, so that it is able to pass on both Red Hat Enterprise Linux 5 and 6.

Enhancements

BZ#516910

A new test, **wlan**, has been added. This test collects and reports information related to wireless interfaces.

BZ#593982

When running the **v7 run** or **v7 certify** command, a warning message is now displayed in case the **results.xml** file is suspected to be too large to submit.

BZ#626970

Upon a system reboot, the **reboot** test is now able to verify that the **vmcore** dump file has been created and can be analyzed by the **crash** utility. Note that in order to do so, the corresponding kernel debuginfo package and the **crash** utility must be installed.

BZ#659789

This update provides a number of usability improvements, and introduces a set of commands to give users better control over the tests. Users are now allowed to use tags in order to run selected test sets.

BZ#668041

Virtualization tests are now capable of logging image metadata. This makes it easier for users to determine what image file was used for the testing.

BZ#676239

The **info** test has been adapted to mark devices that are considered a technology preview as such in its output.

BZ#677752

The **network** test has been adapted to produce less verbose output for ICMP tests and allow only 5 retries.

BZ#680225

To test file transfers over TCP, previous versions of the **network** test used the **NFS** protocol. This update enables the use of **HTTP** for file transfer tests.

BZ#690218

When issued with the **--debug** command line option, **v7** no longer suppresses exceptions raised in tests. This allows users to review tracebacks for debugging purposes.

BZ#690797

Users are now allowed to configure the following options:

- The FV test time limit (**60 minutes** by default)
- The reboot time limit (**10 minutes** by default)
- The **results.xml** warning size limit (**16MB** by default)

5. v7 release 1.2

This section contains important information pertaining to release 1.2 of the v7 Hardware Test Suite, including known problems, resources, and other issues. Read this document before using this release of v7.

Bug Fixes

BZ#487184

The validation for the info test module passes now wireless modules from Red Hat Supplemental packages.

BZ#512153

The Hardware Certification Test for this module works correctly.

BZ#555909

A kdump test was added for Red Hat Enterprise Linux 6.

BZ#568467

v7 now contains a CPU clock test.

BZ#568518

A BMC fencing test has been added.

BZ#568526

A reboot test has been added.

BZ#570714

v7 hardware certification test works as expected even in the dm_log_clustered module.

BZ#574639

The INFO test now shows the DUP usages and highlights them in the output.

BZ#581463

The memory test now works as expected even on larger scale systems.

BZ#582090

The rhpl call has been disabled for v7.

BZ#584121

The Red Hat Enterprise Linux 6 network test mount command works without flaws in NFS testing.

BZ#585890

The counting test in v7 now works as expected.

BZ#586568

When running the **`v7 submit`** command , the test results are now generated correctly.

BZ#586568

Running the **`v7 submit`** command no longer fails.

BZ#586941

`system-config-display` is no longer required.

BZ#587434

All test results are now included when running the **`v7 submit`** command.

BZ#588702

The CPU scaling test now properly checks the content of the **`/sys/devices/system/cpu/cpu<n>/cpufreq/scaling_available_frequencies`** file.

BZ#591357

On Red Hat Enterprise Linux 6, the **`info`** test no longer runs **`sosreport`** with the **`--no-progressbar`** option.

BZ#598544

Interrupting the v7 process using the Ctrl+c keystroke now does not result in corrupted test results.

BZ#599108

The **continue** command has been added to allow a user to continue previously interrupted test.

BZ#599725

Error messages are no longer logged when running the **v7 run** command.

BZ#599741

The **libvirtd** service is now properly started when required.

BZ#599746

The profiler test no longer fails when **/etc/modprobe.conf** does not exist.

BZ#605247

The package now depends on *qemu-kvm*.

BZ#605277

The **lvs** utility is no longer called with an incorrect path.

BZ#606755

The v7 program no longer fails with the **unknown command: run** error message.

BZ#606963

Running the storage test on Red Hat Enterprise Linux 6 now works as expected.

BZ#607981

The v7(8) man page has been updated to cover all currently supported command line options.

BZ#608535

The audio test uses sound samples from the **/usr/share/sounds/alsa/** directory.

BZ#608556

During the tape test, the tar utility is now correctly run with the **-P** option.

BZ#612278

The Network File System (NFS) protocol is now tested over TCP by default.

BZ#616943

The whitelist file location has been updated for Red Hat Enterprise Linux 6 on 64-bit architectures.

BZ#616949

The FV tests have been removed from the test plans on 64-bit architectures.

BZ#616969

The core test no longer fails with "TypeError".

BZ#619252

The CPU scaling test now displays the original frequency along with the new one.

BZ#619712

The CPU scaling test no longer fails with "TypeError" on Red Hat Enterprise Linux 6 for 64-Bit PowerPC and IBM System z.

BZ#619773

The reboot test no longer fails with the **`Continuation instance has no attribute 'systemLogBootMarker'`** error message.

BZ#620672

The Security-Enhanced Linux (SELinux) status is now properly checked.

BZ#620918

The reboot test now checks the kdump configuration before attempting to panic the kernel.

BZ#621041

The V7-1.2-14 core test no longer fails on IBM System z Red Hat Enterprise Linux 6 and 64-bit PowerPC Red Hat Enterprise Linux 6.

BZ#621056

After issuing the **`v7 certify -m auto`** command, v7 no longer fails after a reboot test.

BZ#621070

The V7-1.2-14 storage test no longer fails on IBM System z Red Hat Enterprise Linux 6 and 64-bit PowerPC Red Hat Enterprise Linux 6.

BZ#621348

A 64-bit PowerPC Red Hat Enterprise Linux 6 now requires the *tree* rpm in case a core test is run.

BZ#621364

A memory test no longer fails on Red Hat Enterprise Linux 6 certification.

BZ#621614

v7 no longer shows an error message during test planning on any systems without a cpuscaling support.

BZ#624141

The cpuscaling test now lists available frequencies from lowest to highest.

BZ#625184

A threaded_memtest.c uses the _SC_NPROCESSORS_ONLN variable to determine the number of processors.

BZ#626020

The storage test no longer returns an error when calculating the device size.

BZ#626524

The reboot test marks the start time of a reboot after the user has responded to the prompt.

6. v7 release 1.1

This section contains important information pertaining to release 1.1 of the v7 Hardware Test Suite, including known problems, resources, and other issues. Read this document before using this release of v7.

Bug Fixes

BZ#484512

As part of the clock test, multi-processor systems are checked for jitter (variations in the periodic signal). Specifically, this test queries the current time across several processor cores and reports an error if the difference between the highest and lowest returned values is greater than 0.2 seconds. If there was high CPU load or if the number of logical CPUs was high enough (e.g. was greater than 16), in some circumstances the jitter test failed. For this update, the clock test's nice level was changed from the default (0) to -20. This gives the test the highest possible priority with the Linux kernel scheduler, allowing the test to run successfully on systems with high CPU loads or high core counts.

BZ#484657

If v7 was used on a system with Python 2.6 installed, deprecation messages concerning the popen2 and exceptions modules presented. As of this update, the v7 build process is Red Hat Enterprise Linux version-specific. If built against Red Hat Enterprise Linux 4.x (which includes Python 2.3 or 2.4) or Red Hat Enterprise Linux 5.x (which includes Python 2.5) v7 will use the popen2 module. If built against a Red Hat Enterprise Linux version later than 5.x, v7 will use the subprocess module which replaced popen2 as of Python 2.6. The exceptions module is available in the global namespace, so, for this update, specific references to the exceptions module were removed. Both changes ensure deprecation messages do not present if v7 is used with Python 2.6.

BZ#489578

On multi-processor systems with solid-state drives (SSDs), the cpuscaling test failed on Core 0 if **`--test info`** was run before **`--test cpuscaling`**. With this update, v7 checks the load average (making sure it is < 1) and performs a sync before beginning the cpuscaling test, ensuring the test works as expected on all systems, including those with SSDs.

BZ#517311

Running the following commands

```
# v7 clean
# v7 plan
# v7 submit
```

caused a traceback error if no tests were run before the **`submit`** was executed. v7 now checks the number of test runs is greater than zero before running **`v7 submit`**.

BZ#526057

An error in the ExpressCard test caused it to erroneously present an

```
Error: Did not confirm the device !
Please re-try
```

When ExpressCard devices were, as the test itself noted, **`Confirmed`** (i.e. plugged in, available for testing and detected as such by the test). This error presented regardless of the bus the ExpressCard was connected to: PCIe or USB. This update corrects the error in the ExpressCard test: when an ExpressCard device is **`Confirmed`**, the above error message no longer presents and the testing continues as expected.

BZ#526071

The print command, as documented in the COMMANDS section of the v7 man page, listed a switch, **`--latest`**, to print the most recent test plan or test result. This is incorrect: the switch is **`--last`**. The man page has been corrected with this update.

BZ#528954:

On systems running httpd, the HTML page available at **`http://`*`hostname`*`/v7/`** includes links to v7 Test Results and Documentation and a link to the Red Hat Hardware Catalog. An error in the anchor tag underlying the Test Results link caused this link to fail with a 404 error. This error was corrected and the Test Results link now connects to the cgi which, in turn, generates an html version of current test results, as expected.

For this update, the cgi which generates the web report was also improved, making errors and more warnings clearer and providing more detailed data in the generated HTML.

BZ#546047

When running the fv_network test, which tests networking on a system running as a fully virtualized guest, certain network test failures in the guest returned 0 exit values and were, as a consequence, mistakenly treated as test passes by v7. This update corrects this: v7 now checks the guest's test run summary rather than the return value and correctly reports network failures on the guest.

BZ#546404

Previously, if the argument provided with the **`--test`** switch was not present in the v7 test library (eg the name of the test to run was incorrect), the entire test still ran. v7 now checks each provided test name before running. If any requested tests are not present, v7 now exits with a *No such test* error.

BZ#548517

An unnecessary call to **runForVirtualization** caused the **v7 plan --test cpuscaling --disable** to fail with the following traceback error:

```
AttributeError: CPUScalingTest instance has no attribute
'runForVirtualization'
```

The call is unnecessary, since the test's own plan methods determine whether tests should be run in the guest environement or not. This update removes the call to **runForVirtualization** and the traceback error no longer presents.

BZ#555045

If test results contained bad or invalid device data, running **v7 submit** with release 23 of v7 1.1 caused a traceback error. This update includes changes that prevent v7 from creating invalid device data and adds better error-handling to let users know if test results contain bad device data.

BZ#557355

When testing for virtualization capability, v7 checked **/proc/cpuinfo** for the vmx (Virtual Machine eXtensions) and smx (Safer Mode eXtensions) flags. Consequently, if

```
# v7 plan
# v7 print
```

Were run on an AMD-based system capable of virtualization, no **fv_*** tests were included in the plan.

With this update, v7 now also checks **/proc/cpuinfo** for the AMD-specific svm (Secure Virtual Machine) flag and running **v7 plan** on such systems produces a plan which includes virtualization tests, as expected.

BZ#557365

A regular expression (regex) in **hardwaretest.py** did not allow for spaces and numbers. Consequently, running **v7 plan** on some versions of Red Hat Enterprise Linux failed with a traceback error, producing no plan for the **v7 print** to print. The particular regex now allows for spaces and numbers and running

```
# v7 plan
# v7 print
```

now works as expected on all supported Red Hat Enterprise Linux releases.

BZ#557674

In some circumstances on both Red Hat Enterprise Linux 4.8 and 5.4, running **v7 plan** resulted in v7 failing with the following error:

```
sh: udevadm: command not found
Could not open /sys/class/dmi/id/sys_vendor ... are you running the right
kernel?
```

v7 now handles the **udevadm: command not found** error internally and v7 no longer fails on systems where **udevadm** is not available.

BZ#558578

On 32-bit x86 systems with more than 1 GB of RAM running **run --test memory** under Red Hat Enterprise Linux 4.x resulted in a traceback error:

```
AttributeError: 'int' object has no attribute 'pipe'
```

This update adds an extended method set to the v7 **Command** class that allows processing of sub-process pipes line-by-line. This line-by-line processing prevents the traceback error and allows the memory test to run.

BZ#559179

When run on systems running Red Hat Enterprise Linux 4.x, an omission in the device test meant only general tests (info, memory, profiler and core) were planned: device-specific tests were not planned. This update corrects that omission and now device-specific tests, such as usb, network, video, dvd, cdrom, storage, memory and audio are planned as expected.

BZ#560635

On some versions of Red Hat Enterprise Linux, v7 was not able to parse **/etc/redhat-release** correctly, causing info test failures and returning unhelpful error messages such as:

```
Error: could not determine kernel RPM name
Error: This kernel was not built by Red Hat!
```

This update introduces a new v7 class, *RedHatRelease*. This class replaces the old *getRedHatRelease* function and is used for all tests and the v7 harness. This new class handles all extant versions of the **/etc/redhat-release** file and will make it easier to deal with any variations that may present going forward.

BZ#560797

On systems with no USB bus (e.g. S/390s), v7 crashed with an exception error. This update improves the Device Detection routines to handle this exception.

BZ#563762

A text transposition typo in **info.py** caused v7 to require a non-existent package — **kernelxen-devel** — be installed in some circumstances. The transposition typo was corrected and v7 now notes the real package, **kernel-xen-devel**, is a run-time dependency if it is required.

BZ#565437

redhatrelease.py did not parse **/etc/redhat-release** successfully if the latter file contained the string *Beta*. This caused v7 to fail when run, for example, on the beta version of

Red Hat Enterprise Linux 5.5. With this update, **redhatrelease.py** now supports the presence of Alpha or Beta strings in **/etc/redhat-release**.

BZ#573837

redhatrelease.py did not parse **/etc/redhat-release** successfully when run on pre-release versions of Red Hat Enterprise Linux 6. This caused v7 to fail with a traceback error. With this update, **redhatrelease.py**, and, consequently, v7 support Red Hat Enterprise Linux 6.

BZ#566778

If **v7 run** was executed without a specified test, the application failed with a Traceback error. This update adds a check for the **--test** switch. If it is not present, v7 now exits with a *no tests specified to run* Error message.

BZ#567378

Running **v7 --test memory** on x86-based systems running Red Hat Enterprise Linux 5.4 failed with a Traceback error. This update improves return value checking on pipe polling and the memory test now works as expected on x86-based systems running Red Hat Enterprise Linux 5.4.

BZ#568226

Errors in the way the **/proc** file system was read meant, when using release 9 of v7 1.1 on Red Hat Enterprise Linux 4.8, the USB test would not detect a plugged-in USB device, returning the following error instead:

```
Running ./usb.py:
USB test:
Note: could not detect USB devices via HAL, using /proc
How many USB sockets are required to be tested? response: 1
testing socket 1 of 1...
Please plug in a USB device - continue? (y|n) response: y
device not found
testing socket 1 of 1...
Please plug in a USB device - continue? (y|n) response: y
device not found
testing socket 1 of 1...
Please plug in a USB device - continue? (y|n) response: n
...finished running ./usb.py, exit code=1
```

This update corrects the **/proc** file system reading errors and USB devices are now detected when plugged in, as expected.

BZ#568465

Previously, **info.py** did not check for the Real-Time (RT) kernel flavor. Consequently, when run on a system running the MRG RT kernel, v7 returned a *This kernel was not built by Red Hat!* error. **info.py** now checks for *rt* in the architecture section of kernel package RPM names and v7 returns the correct information when run on RT-based systems.

BZ#568468

If the v7 info test was run on a system running the MRG RT kernel the log contained multiple **`Cannot read whitelist file`** errors. An ABI Whitelist is not generated for the MRG RT kernel and, as of this update, v7 no longer checks for an ABI Whitelist when run on MRG RT kernel-based system.

BZ#568492

If the video test was run on a system not running X Windows (eg a system running at run level 3), v7 failed with a traceback error:

```
IOError: [Errno 2] No such file or directory: '/var/log/Xorg.2.log'
```

v7 now checks for the existence of **`/var/log/Xorg.2.log`** before attempting to copy it, avoiding the traceback error.

BZ#570637

When testing a fully-virtualized Red Hat Enterprise Linux 5.x instance running under KVM, the **`fv_*`** tests require the **`kvm-tools`** package group and the **`kvm-qemu-img`** package. When testing a fully-virtualized Red Hat Enterprise Linux 6 instance running under KVM, the **`fv_*`** tests require the **`qemu-kvm-tools`** package group. With this update, these packages are now requested at runtime if they are not present, allowing the **`fv_*`** tests to run as expected.

BZ#570917

When run on KVM-based guest instances, the **`fv_*`** tests failed to run when SELinux was in (the required) enforcing mode. If the guest instance was switched to permissive mode, errors regarding invalid accesss from qemu to the guest images were reported. This update corrects the underlying image installation location error and KVM-based guest instances can now run the **`fv_*`** tests while running in SELinux's enforcing mode, as expected.

BZ#571599

An error in the way v7 verified its own install state caused it to fail with traceback errors when running the info test. v7 now checks the output of **`rpmVerify`** correctly and, assuming v7 passes the rpm verification, the info test now runs without traceback errors, as expected.

BZ#571610

Previously, v7 only used **`kudzu`** for device detection on Red Hat Enterprise Linux 4.x. In some circumstances, consequently, when the following commands were run:

v7 erroneously reported a **`No such test "network"`** error. With this update, v7 now uses both **`kudzu`** and RHN's hardware probing library and no longer presents the error.

BZ#572265

If **`v7 plan`** was run, a USB-based electronic key fob was then installed on a system, and **`v7 plan`** was then run again, a storage test entry should have been added to the plan and the extant USB and ExpressCard tests left as is. Previously, however, the USB and ExpressCard tests inadvertantly associated an arbitrary device with the test and, as a consequently, adding a key fob and re-running **`v7 plan`** resulted in the existing USB and ExpressCard tests being replaced by new entries pointing to the arbitrary devices. This update corrects the behavior of the USB and ExpressCard tests and adding a key fob and re-running **`v7 plan`** now acts as

expected: adding a storage test and leaving the extant USB and ExpressCard tests as is.

BZ#572346

When the **fvtest** cannot determine the proper bridge device, it returns a **could not determine xen bridge device, assuming xenbr0** warning and sets a default bridge in the **fv** config file. A copy-and-paste error in the **fvtest** script caused this default bridge to be set to **xenbrxenbr0**. This is incorrect and, for this update, the error has been corrected. The default bridge device set by the script is now, correctly, **xenbr0**.

BZ#572606

In some circumstances, when running the storage test on S/390s running Red Hat Enterprise Linux 4.x, the blkid command failed with a Traceback error:

```
File "/usr/share/v7/lib/v7/command.py", line 131, in _getString
line = self.output[0].strip()
IndexError: list index out of range
```

For this update, the value against which self.output was checked was changed and the Traceback error no longer occurs.

BZ#572660

If **v7 plan** was run on a system running Red Hat Enterprise Linux 4.8 that had no extant plan (i.e. a system on which **/var/v7/plan.xml** was not present) the resultant plan added duplicate tests for detected storage devices such as floppy drives, optical drives and hard drives. With this update, v7 now checks for duplicate tests for each optical media family (cdrom, dvd and bluray) as well as for floppy drives and hard drives.

BZ#573102

Previously, if any part of the installed v7 package was modified (e.g., the user manual was deleted from **/var/pubs/** or one of the test scripts in **usr/share/v7/tests/** was edited) and the info test — **v7 run -t info** — was run, v7 still returned a pass.

This is incorrect. If an installed instance of v7 presents any discrepancies when **rpm -V v7** is run, the info test should not pass. With this update, the info test now verifies v7 is unmodified and, if it is not, adds the discrepency found by **rpm** and a **Verification of v7 rpm failed** error to the info log file.

BZ#573144

The increased size of **sos** reports means v7 **results.rpm** files may larger than 20 MB, the limit imposed by Red Hat Bugzilla for file submissions. With this update, v7 no longer includes the data from **sos**'s SELinux module nor its Progress Bar in test results. This greatly reduces the size of **results.xml** and, consequently, the size of **results.rpm**.

BZ#573670

If v7 was installed and then **v7 plan** run on a fresh Red Hat Enterprise MRG (Messaging/Realtime/Grid) instance, a runtime dependency message presented as follows:

```
info requires kernel-rt-develrt
The following rpms are required for testing:
kernel-rt-develrt
Would you like to install them now? (y|n)
```

The required package name listed above was incorrect. This update corrects this: in the above circumstance, the required package is now correctly listed as **kernel-rt-devel** (no trailing *rt*) and the associated rpms — **rteval-loads rt-tests rt-setup kernel-rt-devel rteval** are now listed as being required for testing.

Note

The above message only presented if **/var/v7/results.xml** did not exist (ie, it presented the first time v7 was run or if **/var/v7/results.xml** was deliberately deleted.)

BZ#573745

The results of any v7 test run were missing the required platform: the value used by the Red Hat Hardware Catalog to determine the architecture used to create a given results package. Consequently, attempting to check test results in failed with an error as follows:

```
There has been a system error: Platform not found
```

This update corrects this omission: running any **v7 --test *test-name*** now includes the required platform as expected.

BZ#573757

Previously, when running **v7 plan**, v7 did not check if the base system supported virtualization. This update adds such a check and removes **fv_*** test planning when run on Red Hat Enterprise Linux 4.x.

Enhancements

BZ#192245

Previously, running **v7 --test info** called the sysreport utility to gather information about a system's hardware and configuration. On Red Hat Enterprise Linux 5 and later, however, sysreport has been replaced with sos. Sos currently emulates calls to sysreport, so the above command still works as expected. There is no known plan to change the behavior of sos in this regard. Nonetheless, relying on this external behavior is unsafe and, with this update, v7 uses its existing version checks to establish which utility to call. On Red Hat Enterprise Linux 4.x, the **v7 --test info** command still calls sysreport. On Red Hat Enterprise Linux 5 and later, however, the same command now explicitly calls the sos utility.

BZ#488145

When a new test plan is created, v7 now checks the test list for any required packages that are not installed. If required but not installed packages are found, a prompt is presented asking if they can be installed.

If the user agrees, v7 passes the required but not installed package list to **yum**. Once **yum** finishes, v7 checks the test list again.

If the user does not agree, v7 returns the following error:

```
Warning: some tests may fail due to missing rpms
```

Note

This check only runs when a new plan is created. It does not run if a plan is changed by the addition and detection of new hardware or by direct user edits.

BZ#523824

Previously the **fv_*** tests, which launched fully-virtualized guest instances of Red Hat Enterprise Linux and then completed the applicable testing from within said guest only supported Xen-based guest instances. With this update, support for KVM-based fully-virtualized guests was added. The **fv_*** tests now work with both Xen and KVM images.

BZ#525736

A new switch — **--model** — was added that, when included in a v7 command line, prompts for user input on Vendor, Make and Model. The prompts show the values currently in results.xml in parentheses and, if no text is entered, the extant information is retained. The v7 man page has also been updated to document this new switch.

Note

v7's default behavior is unchanged. It still tries to determine Vendor, Make and Model automatically and, if this fails, it still prompts the user for this information. Adding the **--model** to a command line shows the user prompts for this information regardless of v7's success or failure in determining this information on its own.

BZ#554915

A new test — **rteval** — was added. The **rteval** test determines the suitability of a system for use in a Real Time Linux environment (such as Red Hat Enterprise MRG). The test measures event latency when a system is under load and reports the latencies encountered during the test.

Note

The rteval test can only be added to a plan when v7 is invoked on a system running the MRG RT kernel.
Also, for such a system to pass the rteval, latency standard deviation must be no more than 3 µs and the maximum measured latency must be no more than 100 µs.

BZ#555895

Many v7 tests include sub-tests. The audio test, for example, includes a record and playback test and the network test includes nfs xfer, ping, ifup and ifdown tests. The test results, however, were written to a single output section in **/var/hts/results.xml**. With this update, test code can now delimit test output sub-sections using <output> tags.

Note

This structured output is still flattened to a single output section when running **v7 submit** to package test results as RPM files for submission to the Red Hat Hardware Catalog.

BZ#536929

Previously, v7 relied primarily on the Hardware Abstraction Layer (HAL) software to detect devices for testing. This update improves device detection by adding calls to **/proc** (the process file system) and **udev** (the Linux device manager).

BZ#555898

Previously, changing the specific tests run on optical media (eg a CD or DVD disk) required manual editing of the test (except for a prompt asking the user to pick between the DVD- and DVD+ formats for DVD tests).

With this update, v7 now allows users to specify the test media. For CDs, the test continues to default to the highest capability media the drive supports but presents a prompt asking what media is to be tested and notes the specific disk required based on the information provided.

For example, when run on a system with a CD drive that supports CD-RW, CD-R and CD-ROM media, the CD test now prompts as follows:

```
Your device /dev/deviceid supports cd-rw, cd-r, cd-rom
Would you like to test cd-rw media? (y|n)
```

When run on a system with a DVD drive that supports DVD-RW, DVD+RW, DVD-R, DVD+R and DVD-ROM, the DVD test will prompt as follows:

```
Your CD/DVD device /dev/deviceid supports dvd-rw, dvd+rw, dvd-r, dvd+r,
dvd
Would you like to test dvd-rw media? (y|n)
```

BZ#555903

Previously, running **v7 run --test suspend** invoked four sub-tests — os suspend, os hibernate, key suspend, and key hibernate — with no option but to run all four. Not all systems have dedicated keys for suspend, hibernate or either, however.

On systems with no dedicated *hibernate* button, for example, running **v7 run --test suspend** to test if the system did suspend and resume properly meant allowing the *key hibernate* test to fail and then manually reviewing the test results to verify the other three tests were passed.

This update adds an opt-out prompt, allowing the user to not run the function-key test when running the suspend tests.

BZ#555842

Previously, v7 depended on the **`Requires`** section of its **`.spec`** file to set package requirements. With this update, v7 takes advantage of its new ability to request and install required packages at runtime. Several packages required only for certain tests (eg the Optical Disk tests) are now not required by the v7 installation rpm but will be called for if and when the appropriate test is run.

Anyone seeking to certify hardware for use with Red Hat Enterprise Linux, should install this updated package which fixes these bugs and adds these enhancements.

A. Revision History

Revision 5-0.400	**2013-10-31**	**Rüdiger Landmann**

Rebuild with publican 4.0.0

Revision 5-0	**Friday Feb 01 2013**	**Florian Nadge**

Added documentation for v7 1.6

Revision 4-0	**Tuesday Jun 05 2012**	**Jaromír Hradílek**

Added documentation for v7 1.5

Revision 3-0	**Monday Nov 07 2011**	**Jaromír Hradílek**

Added documentation for v7 1.4

Revision 2-0	**Fri May 06 2011**	**Jaromír Hradílek**

Added documentation for v7 1.3

Revision 1-0	**Mon Oct 04 2010**	**Douglas Silas**

Remove bugs 568458 and 607976.
Re-publish both version 1.1 and version 1.2 v7 Technical Notes to docs.redhat.com.

Revision 0-0	**Wed Sep 29 2010**	**Florian Nadge**

Initial creation of book by publican